

# PS3J100 – User manual

*Proscan III Interactive control Centre*



## Worldwide distribution

**Prior Scientific, Ltd**  
Cambridge, UK

T. +44 (0) 1223 881711  
E. [uksales@prior.com](mailto:uksales@prior.com)

**Prior Scientific, Inc**  
Rockland, MA. USA

T. +1 781-878-8442  
E. [info@prior.com](mailto:info@prior.com)

**Prior Scientific, GmbH**  
Jena, Germany

T. +49 (0) 3641 675 650  
E. [jena@prior.com](mailto:jena@prior.com)

**Prior Scientific KK**  
Tokyo, Japan

T. +81-3-5652-8831  
E. [info-japan@prior.com](mailto:info-japan@prior.com)



## Table of Contents

---

# Table of Contents

<b>SECTION 1</b>	<b>IMPORTANT SAFETY INFORMATION</b>	<b>3</b>
1.1	<i>Important Safety Information</i>	3
<b>SECTION 2</b>	<b>GETTING STARTED</b>	<b>4</b>
2.1	<i>Identifying The Parts Of The Control Centre</i>	4
2.2	<i>Connecting to the Proscan III</i>	5
2.3	<i>XY Control</i>	6
2.4	<i>Z Control</i>	8
2.5	<i>Filter Control</i>	10
2.6	<i>Shutter Control</i>	12
2.7	<i>Lumen Control</i>	13
2.8	<i>Fourth Axis Theta Control</i>	14
<b>SECTION 3</b>	<b>CHANGING SETTINGS</b>	<b>15</b>
3.1	<i>Entering Setting Menu</i>	15
3.2	<i>Speed and Direction Settings</i>	16
3.3	<i>Encoders</i>	16
3.4	<i>TTL</i>	17
3.5	<i>Joystick Units</i>	17
3.6	<i>Versions</i>	
<b>SECTION 4</b>	<b>COMPATIBILITY</b>	<b>19</b>
4.1	<i>Prior Controllers Compatible with PS3J100</i>	19
<b>SECTION 5</b>	<b>SPECIFICATIONS</b>	<b>20</b>
5.1	<i>Dimensions</i>	20
<b>SECTION 6</b>	<b>TROUBLESHOOTING</b>	<b>21</b>
6.1	<i>Troubleshooting</i>	21
<b>SECTION 7</b>	<b>RETURNS AND REPAIRS</b>	<b>22</b>
7.1	<i>Returns and Repairs</i>	22

## Section 1

## SAFETY INFORMATION

---

### 1.1 IMPORTANT SAFETY INFORMATION

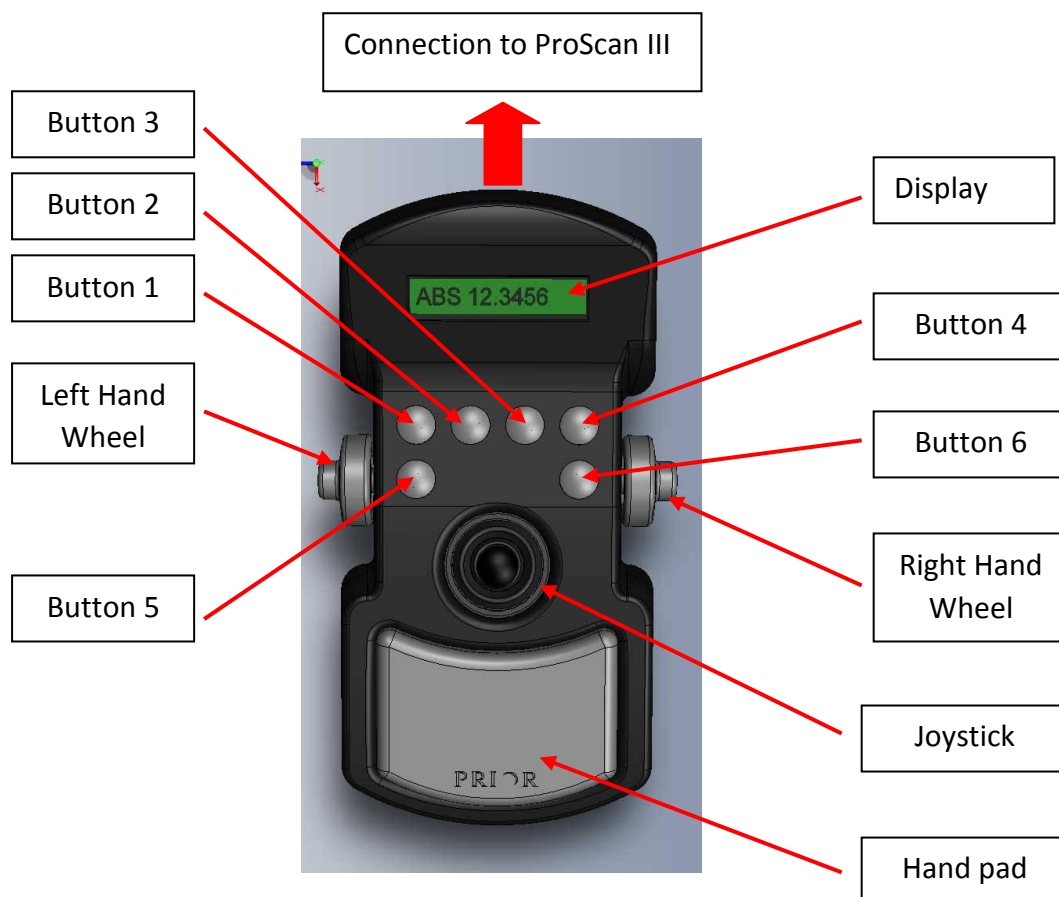
Save this manual as it contains important safety information and operating instructions.

- Do not get the system wet.

## Section 2

## GETTING STARTED

### 2.1 IDENTIFYING THE PARTS OF THE CONTROL CENTRE



#### Overview:

The **Joystick** always controls X and Y axis of the stage.

**Button 1** is always the Menu button.

**Button 5** is the speed control for the X and Y axis for the stage.

**Button 6** is the speed control for the Z axis.

**Buttons 1 – 4** functions are determined by the messages on the lower portion of the display screen.

**Right hand wheel** is normally used for focus

**Left hand wheel** is usually used for focus unless in filter wheel screen when it controls filters.

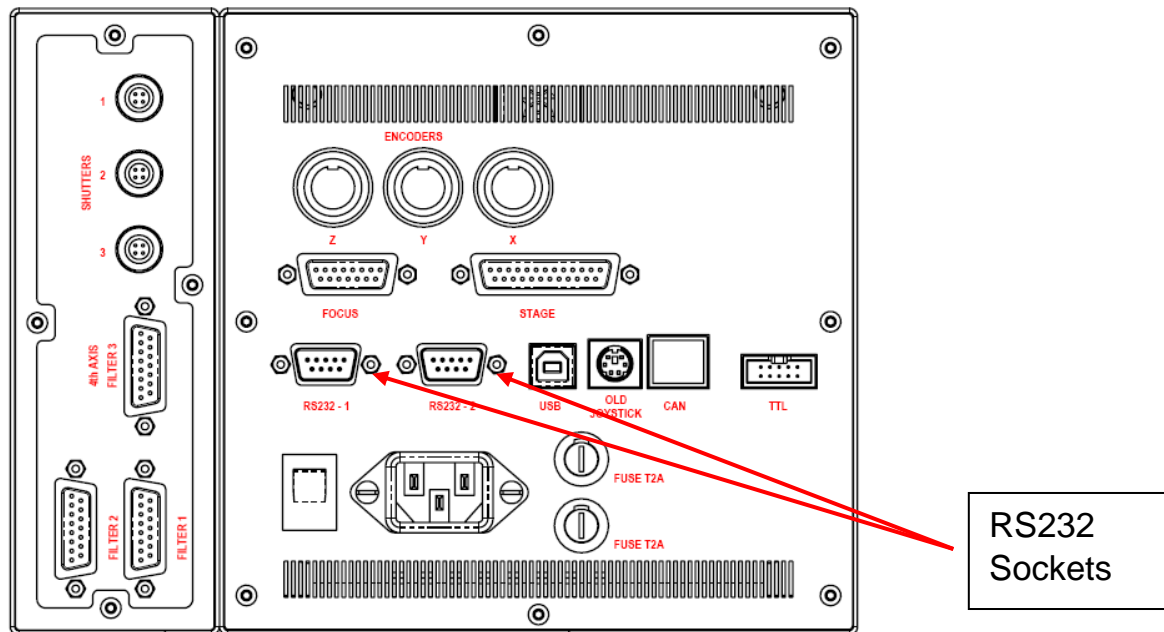
Menus scroll through available options before returning to the first option.

For settings menu hold down Menu button for 3 seconds.

## 2.2 CONNECTING TO PROSCAN III

Switch off the ProScan III unit.

Plug the RS232 plug into one of the two RS232 sockets on the back of the ProScan III unit as indicated below.



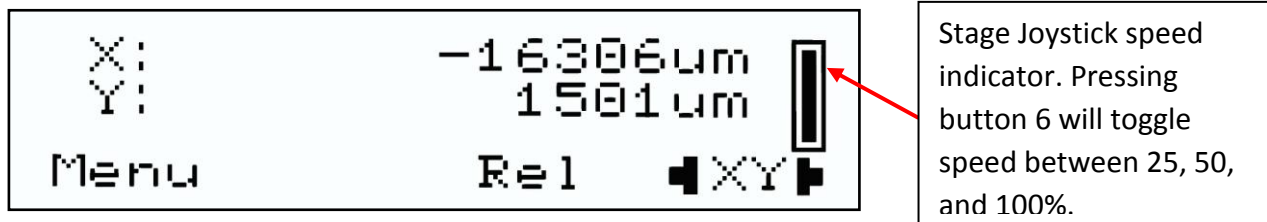
The Control Centre will power up and display “PRIOR” while starting up.

The Control Centre will now display one of the relevant accessory screens from the following sections or the settings menu if no accessories are attached to the PS3.

The Control Centre is ready to use.

## 2.3 XY CONTROL

### 2.3.1 Absolute position screen



The XY control screen is displayed on start-up if a stage is connected to the system.

The absolute position is displayed in um.

If an E is present before the X or Y then the stage is encoded.

#### Button Functionality:

Button 1: Menu

Button 2: None

Button 3: Toggle to relative positional display format.

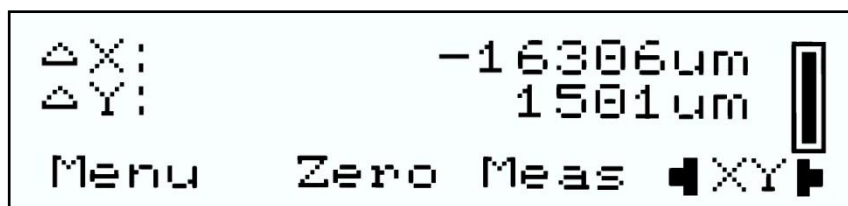
Button 4: Change the function of the Left and Right Wheels to fine control of the X and Y axis. (Joystick still active)

The Joystick controls XY motion.

If a focus is attached in this mode the right and left wheels control focus.

### 2.3.2 Relative position screen

Press Button 3 "REL" to toggle to this display.



The absolute position is replaced by the relative position.

A Delta sign before X and Y indicates that the control centre is in Relative mode.

#### Button Functionality:

Button 1: Menu

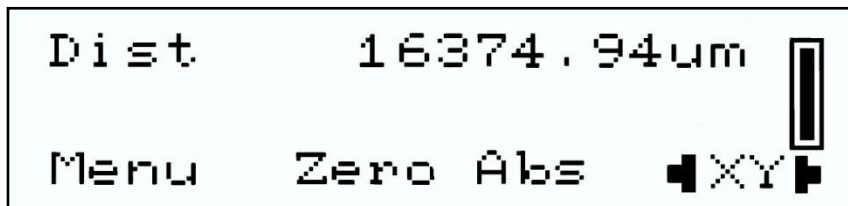
Button 2: Zero relative position (does not affect absolute position of system).

Button 3: Toggle to measurement positional display.

Button 4: Change the function of the Left and Right Wheels to fine control of the X and Y axis. (Joystick still active)

### 2.3.3 Measurement position screen

Press Button 3 “Meas” to toggle to this display.



The relative position is replaced by the distance from 0, (0 abs 0, or position when zero button was pressed).

#### Button Functionality:

Button 1: Menu

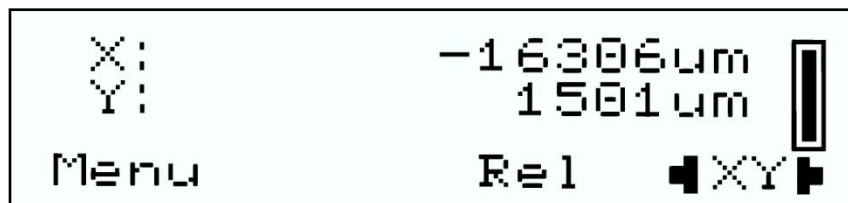
Button 2: Zero relative position (does not affect absolute position of system).

Button 3: Toggle to measurement positional display.

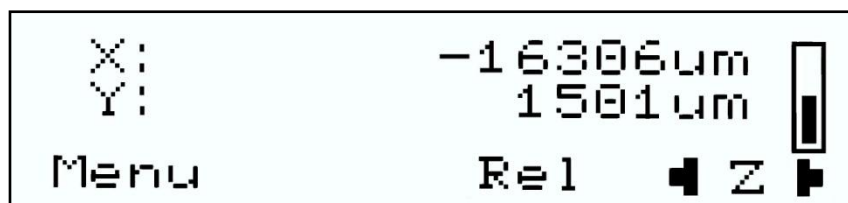
Button 4: Change the function of the Left and Right Wheels to fine control of the X and Y axis. (Joystick still active)

### 2.3.4 Toggling between focus and XY wheel control

Press button 4 to toggle between using the Left and right wheels to control focus or the X and Y axis individually.



Press Button 4 to move to XY control

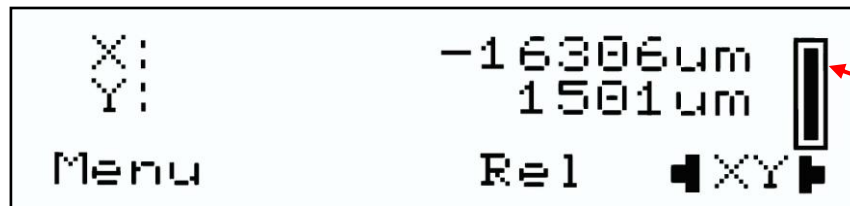


Press Button 4 to move to focus control



### 2.3.5 Toggling between joystick speeds.

Press Button 6 to toggle between 25, 50, and 100% joystick speed.



Stage Joystick speed indicator. Pressing button 6 will toggle speed between 25, 50, and 100%.

## 2.4 Z CONTROL

Press Button 1 (Menu) to scroll through the available options until the focus is displayed.



### 2.4.1 Focus control

The absolute focus position is displayed.

#### Button Functionality:

Button 1: Menu

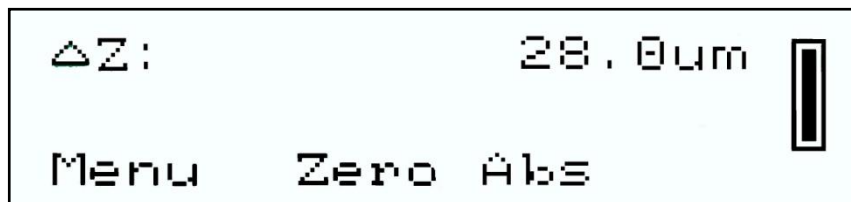
Button 2: None

Button 3: Toggle to relative positional display.

Button 4: None

### 2.4.2 Relative position screen

Press Button 3 “REL” to toggle to this display.



The absolute position is replaced by the relative position.

A Delta sign before Z indicates that the control centre is in Relative mode.

#### Button Functionality:

Button 1: Menu

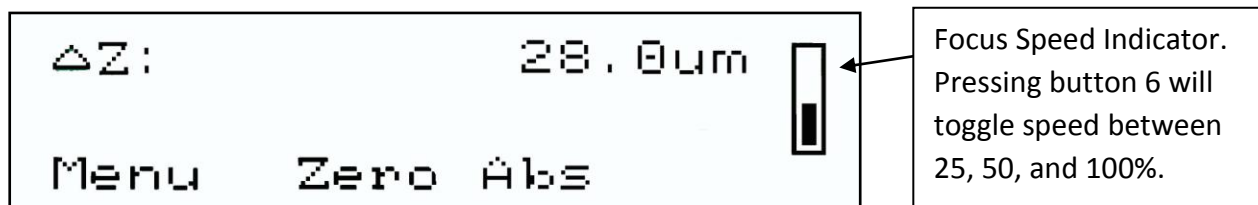
Button 2: Zero relative position (does not affect absolute position of system).

Button 3: Toggle to absolute positional display.

Button 4: None

### 2.4.3 Toggling between joystick speeds.

Press Button 6 to toggle between 25, 50, and 100% joystick speed.



### 2.4.4 Setting Fast Up and Fast Down buttons.

Buttons 5 and 6 can be changed from toggling the focus and stage speed to be fast up and fast down. Use the following command sent to the attached ProScan Controller.

Command	Arguments	Response	Description
ICC CS152Z	s	R	Sets the speed s (in microns/s) of button 5 and 6. Set to 0 to return to the default us of buttons 5 and 6.
ICC CS152Z		s	Returns the speed s (in microns/s) of button 5 and 6.

## 2.5 FILTER CONTROL

### 2.5.1 Filter Screens

```

F1 FITC      F2 FITC
F3 FITC
Menu Sel

```

The screen displays the attached Filter wheels labelled with where they are physically attached to ProScan III;

F1 is Filter wheel socket 1

F2 is Filter wheel socket 2

F3 is Filter wheel socket 3

Press Button 2 Sel each filter wheel in turn.

Displayed after the identifier is the position or name of the filter/attenuator.

The LumenPro systems will appear in this screen, see section 2.7.

### 2.5.2 Controlling Filter Wheels

Select F1: The left hand wheel controls the filter position of wheel 1.

Select F2: The left hand wheel controls the filter position of wheel 2.

Select F3: The left hand wheel controls the filter position of wheel 3.

```

          F2 FITC
Menu Sel Home

```

#### Button Functionality:

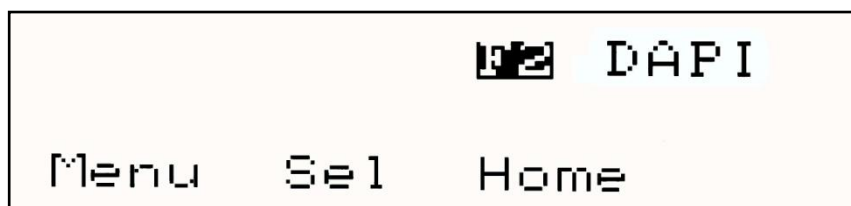
Button 1: Menu

Button 2: Selects the next Filter Wheel

Button 3: Homes selected Filter Wheel

Button 4: None

### 2.5.3 Filter Tagging

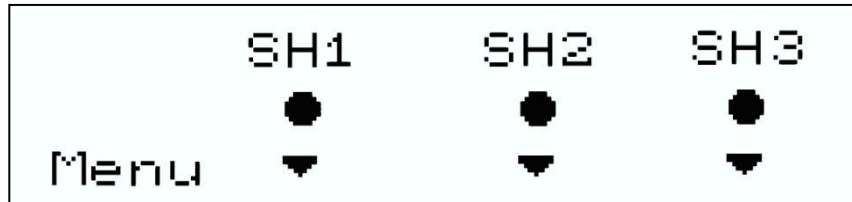


The positions of filter wheels can be named to help you remember which filters set are in which location. These names called “tags” are displayed on the control centre display once they have been set. Each Filter position in each filter wheel can be given a unique name. Use the following ASCII commands sent via RS232 through a terminal or via the VBDemo program supplied free on the Prior Website [www.prior.com](http://www.prior.com).

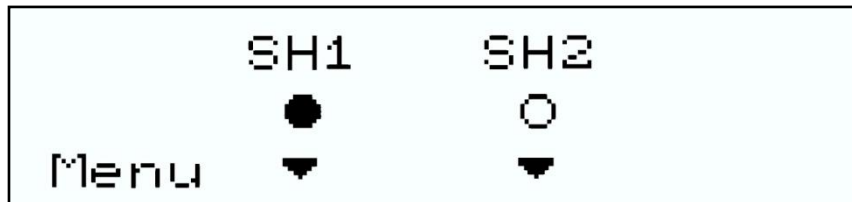
Command	Arguments	Response	Description
7	W,T,P	Text	Displays tag text for filter wheel w at position p. 7,1,T,3 will respond with text for filter wheel 1 position 3.
7	W,T,P, text	R	Writes text to memory for filter wheel W and Position P. 7,1,T,3,Dapi will set the tag for filter wheel 1 position 3 to “Dapi” Tags are 6 characters long and are displayed in control centre display.

## 2.6 SHUTTER CONTROL

The screen will display any attached standard shutters. Use the buttons to control the shutters.



Shutters 1 and 2 and 3 closed.



Shutter 1 closed and 2 open.

### Button Functionality:

Button 1: Menu

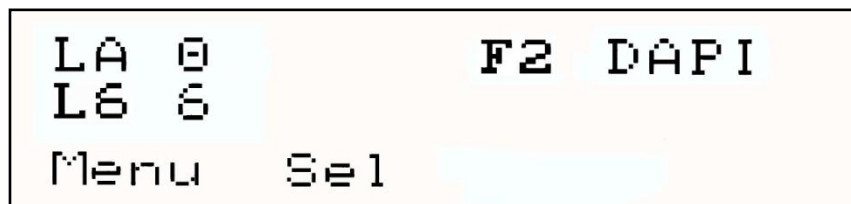
Button 2: Control of Shutter 1, toggle Open/Close

Button 3: Control of Shutter 2, toggle Open/Close

Button 4: Control of Shutter 3, toggle Open/Close

## 2.7 LUMENPRO CONTROL

### 2.7.1 LumenPro Screens

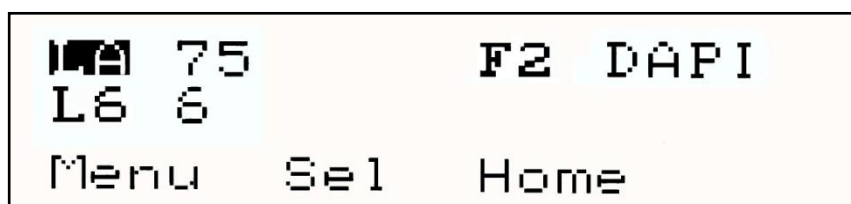


The LumenPro appears in the Filter screen as:

- L6 6 position filter wheel, displayed after the identifier is the position or name of the filter/attenuator.
- LA Lumen light attenuator, displayed after the identifier is the % light output of the Lumen attenuator.

Press Button 2 Sel to toggle between the two controls.

### 2.7.2 Controlling the Lumen Accessories.



Select L6: The left hand wheel controls the filter position

Select LA: The left hand wheel controls the Attenuator position.

#### Button Functionality:

Button 1: Menu

Button 2: Selects the next accessory

Button 3: Homes selected accessory

Button 4: None

### 2.7.3 Filter Tagging

The positions of filter wheels can be named to help you remember which filters set are in which location. These names called “tags” are displayed on the control centre display once they have been set. Each Filter position in each filter wheel can be given a unique name.

Use the following ASCII commands sent via RS232 through a terminal or via the VBDemo program supplied free on the Prior Website [www.prior.com](http://www.prior.com).

Command	Arguments	Response	Description
7	W,T,P	Text	Displays tag text for filter wheel w at position p. 7,1,T,3 will respond with text for filter wheel 1 position 3.
7	W,T,P, text	R	Writes text to memory for filter wheel W and Position P. 7,1,T,3,Dapi will set the tag for filter wheel 1 position 3 to “Dapi” Tags are 6 characters long and are displayed in control centre display.

## 2.8 FOURTH AXIS THETA CONTROL

Displays the current theta angle

Theta Angle	0.0
Menu 1.0	← →

#### Button Functionality:

Button 1: Exit to next menu

Button 2: Toggle thru angle step size, (0.1,1.0,10,90,180)

Button 3: Move step size anti-clockwise

Button 4: Move step size clockwise

## Section 3

## CHANGING SETTINGS

### 3.1 ENTERING SETTING MENU

Hold down button I (Menu) for 3 seconds. The Control Centre will enter the settings menu.

Only the settings applicable to the accessories attached will be displayed.

To change the setting use the right hand wheel, to scroll through setting use the left hand wheel.

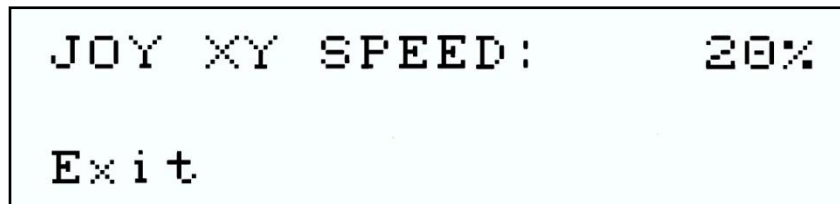
In the menu you have access to:

Stage XY speed settings	STAGE XY SPEED: 100% Exit
Stage Z speed settings	STAGE Z SPEED: 100% Exit
Joystick XY speed settings	JOY XY SPEED: 20% Exit
Joystick Z speed settings	JOY Z SPEED: 100% Exit
Stage X direction	STAGE X-DIR: +VE Exit
Stage Y direction	STAGE Y-DIR: +VE Exit
Stage Z direction	STAGE Z-DIR: +VE Exit
Joystick X direction	JOY X-DIR: +VE Exit
Joystick Y direction	JOY Y-DIR: +VE Exit
Joystick Z direction	JOY Z-DIR: +VE Exit
TTL services	TTL3 Pulse High Exit ▼ ▼
Encoder Information	STAGE ENC SERV Exit ▼ ▼ ON OFF
Joystick Units	UNITS - MICRONS Exit



### 3.2 SPEED AND DIRECTION SETTINGS

The Stage and Joystick speed can be set here in the control centre, this affects the speeds stored and used in the ProScan III.



Press Button1 (Menu) to Exit settings menu.

Stage speed refers to the speed of the axis under computer control

Joy speed refers to the speed of the axis under Joystick Control

Stage direction refers to which direction is -ve and +ve when controlled via computer

Joy direction refers to which direction is -ve and +ve when controlled via Joystick (Change this to changed the handedness of the Joystick).

Scroll to the option you require using the left hand wheel then change the option using the right hand wheel.

### 3.3 ENCODERS

#### 3.3.1 Encoder Settings

Scroll the left wheel to Stage, for XY encoders only available if encoder connected and detected by ProScan III.

Scroll the left wheel to Focus, for Z encoders only available if encoder connected and detected by ProScan III.



#### Button Functionality:

Button 1: Exit to main Menu

Button 2: none

Button 3: Toggle Encoder on / off

Button 4: Toggle Servo on ./ off

Encoder active means the encoder is used to provide positional feedback.

Servo active means the axis will attempt to remain at the given position.

### 3.4 TTL

The TTL functionality of the ProScan III can be tested via the Control Centre, this is designed to allow users to test the output of the system.



Scroll with the left hand wheel to select which TTL output is required.

**Button Functionality:**

Button 1: Exit setting menu

Button 2: None

Button 3: Send Pulse, (direction selected by button 4)

Button 4: Put signal High or Low.

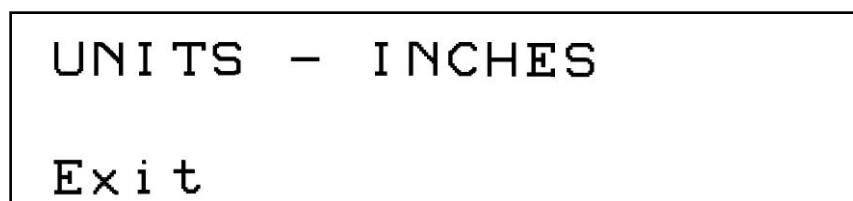
### 3.5 JOYSTICK UNITS

The units of the joystick can be converted from the default value of microns into inches.



In the settings menu scroll with the left hand wheel until you come to the units menu

With the right hand wheel scroll backwards to select inches, scroll forward to return to microns.



### 3.6 VERSIONS

```
Joystick ver    0.09  
Controller ver  0.14  
Exit
```

The Joystick and controller firmware version are displayed.

## Section 4 COMPATIBILITY

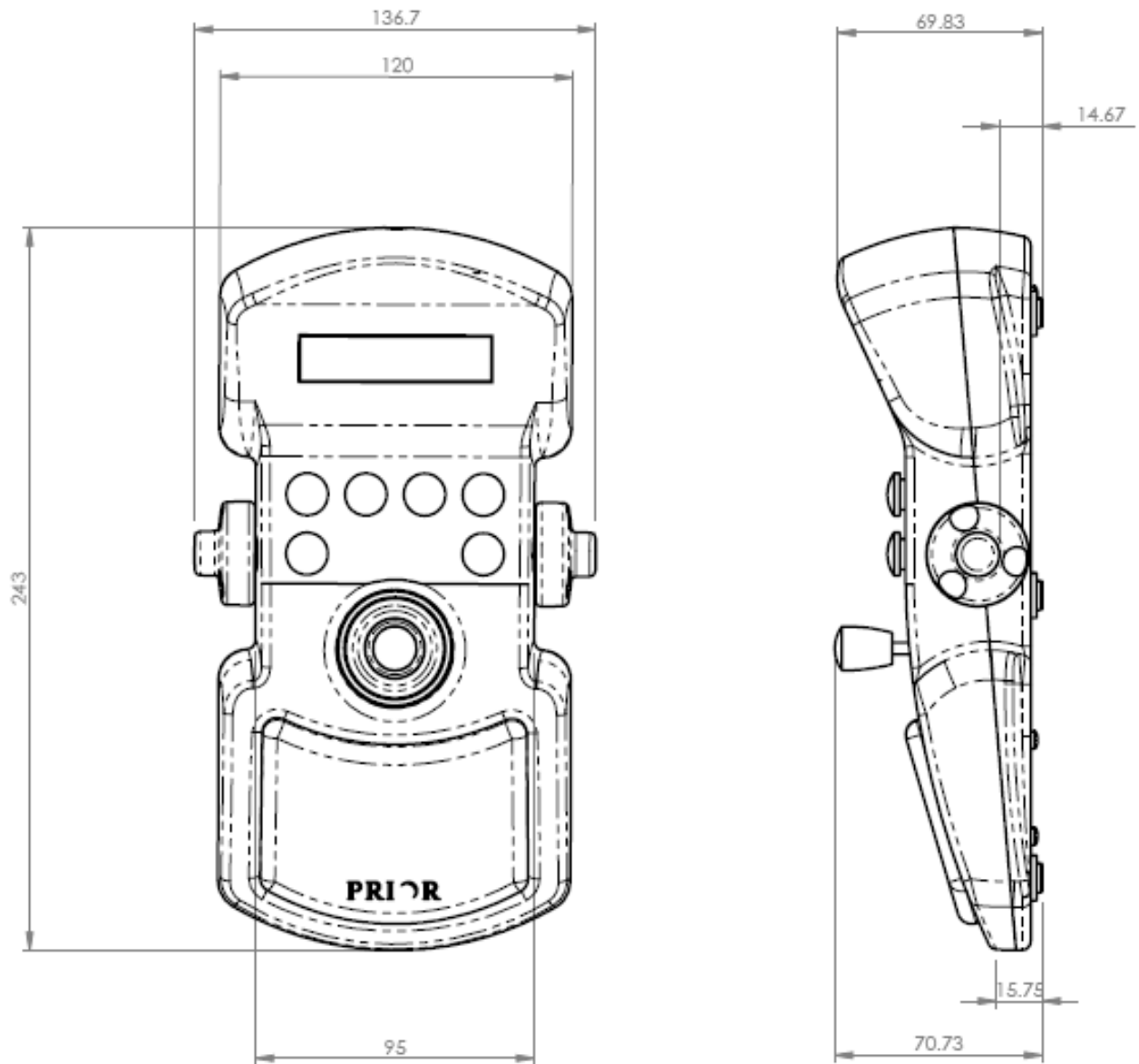
---

### 4.1 PRIOR CONTROLLERS COMPATIBLE WITH PS3J100

The control centre is currently only compatible with ProScan III units.

## Section 5 SPECIFICATIONS

### 5.1 DIMENSIONS



Dimensions are in mm.

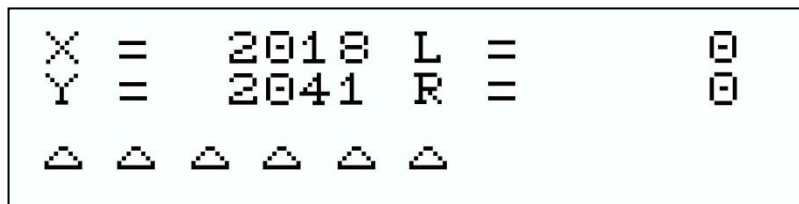
## Section 6

## TROUBLESHOOTING

### 6.1 TROUBLESHOOTING

#### Checking your Joystick is centred and your buttons work.

To enter this mode, hold down Menu button on start-up.



X and Y is the displacement of the Joystick in X and Y.

L is the displacement of the digital encoder wheel on the left hand side.

R is the displacement of the digital encoder wheel on the right hand side.

Pushing the six buttons will change the associated triangle on the lower part of the screen to an upside down solid triangle.

#### Problem:

Control Centre does not power up on start-up.

#### Solution:

Check connections with ProScan III, and power off and power on ProScan III.

#### Problem:

Sections of the Control centre do not respond, i.e., Joystick, or the wheels.

#### Solution:

Check the software to ensure they are not deactivated. (H and J commands)

(If the Joystick is deactivated it will display "Deactivated" on the screen.)

## Section 7

## RETURNS AND REPAIRS

### 7.1 RETURNS AND REPAIRS

Should you experience problems with your Plate Loading System and want to send it back for service, warranty or otherwise, a Return Material Authorisation (RMA) number must be obtained from the appropriate Prior Scientific office before returning any equipment. For North and South America contact Prior Scientific Inc. and for the rest of the world call Prior Scientific Instruments Limited on the telephone numbers shown below.

**Prior Scientific Instruments Ltd,**

3-4 Fielding Ind. Estate  
Wilbraham Road,  
Fulbourn,  
Cambridge,  
**ENGLAND,**  
CB21 5ET

Tel: 01223 881711

Fax: 01223 881710

email: [uksales@prior.com](mailto:uksales@prior.com)

**Prior Scientific Inc.**

80 Reservoir Park Drive,  
Rockland,  
MA 02370-1062

**USA**

Tel: 781 878 8442

Fax: 781 878 8736

email: [info@prior.com](mailto:info@prior.com)

**Prior Scientific GmbH**

Wildenbruchstr. 15  
D-07745  
Jena

**GERMANY**

Tel: +49 (0)3641 675 650

Fax: +44 (0)3641 675 651

email: [jena@prior.com](mailto:jena@prior.com)

**Prior Scientific KK**

Kayabacho 3<sup>rd</sup> Nagaoka Bldg. 10F  
2-7-10  
Nihonbashi Kayabacho,  
Chuo-Ku  
Tokyo  
103-0025

**JAPAN**

Tel: +81 (0) 3 5652 8831

Fax: +81 (0) 3 5652 8832

email: [info-japan@prior.com](mailto:info-japan@prior.com)